FROM OUR WATERSHEDS

TO YOUR HOME

2005 Drinking Water Quality Report

Seattle Public Utilities

EXECUTIVE SUMMARY OF DRINKING WATER QUALITY REPORT

Seattle Public Utilities is required to conduct extensive monitoring of the drinking water supplied to our customers. We monitor for over 170 compounds on a continuous, daily, weekly, monthly or annual basis. The few compounds of regulatory concern that were detected in our water are reported to our customers each year. These include turbidity, fluoride, coliform, chlorine, lead, copper, and disinfection by-products. All of these compounds are well below the limits set by the US Environmental Protection Agency, making our water among the best in the nation.

Detailed summary tables of water quality data are presented later in this document. Some of the highlights include the following: The metals testing conducted at homes showed low levels for both lead and copper in the drinking water (205 of the 207 samples collected in 2005 were below the action level for lead). Disinfection by-products such as Trihalomethanes and Haloacetic Acids are generally less than half the maximum allowable level. Fluoride is added to the water at levels recommended by health professionals. Chlorine is added to the water to provide protection throughout the distribution system from microbial contamination.

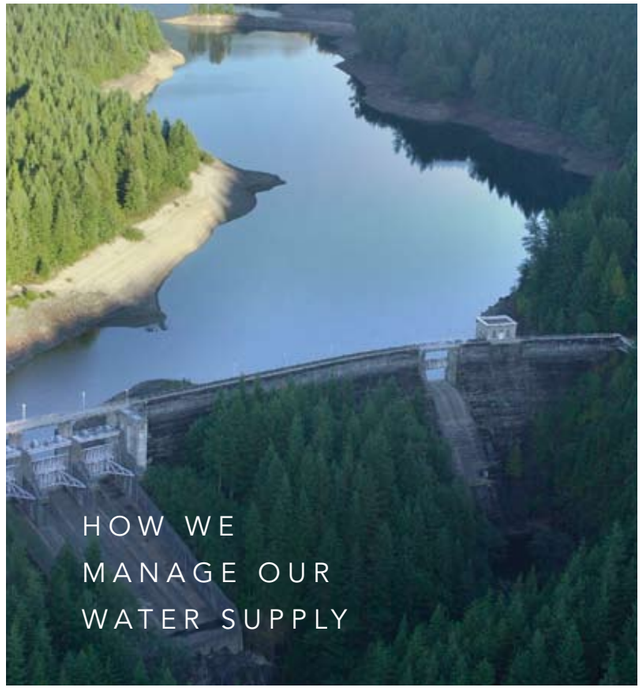
The average chlorine concentration is less than 1 part per million. With new treatment plants at the Cedar and Tolt, our bacteriological quality in the distribution system has continued to improve, with only 0.2 percent of all samples testing positive in 2005. The standard is 5%.

The main reason we have such good quality water is because of our protected water sources. The Cedar and South Fork Tolt River Watersheds are closed to public access. This minimizes the opportunity for contaminants to enter the water. For example, the raw water levels of Cryptosporidium are low compared to typical rivers and streams throughout the country. And, SPU's treatment processes remove and inactivate Cryptosporidium.

Seattle Public Utilities and the City of Seattle want to keep the public informed about their water quality. There are several ways to get more information about our water quality or to give us your opinion; either by phone, e-mail, or via the City's web site. See the back of this Report for an array of ways you can contact us.

The Tolt River.

The Chester Morse Reservoir, which supplies much of Seattle's water from the Cedar River supply.



HOW WE MANAGE OUR WATER SUPPLY

Seattle Public Utilities tests your water every day.

Go ask any financial advisor. The most prudent thing you can do is not spend more than you make, right? But for millions of people, managing their money is a constant challenge. Try meeting that challenge and throw in unpredictable weather conditions, climate change, a growing population, Lake Washington, and endangered species, and you might have a sense of our water resource management challenge.

Managing Seattle's water supply to meet the challenge is a delicate balancing act that takes skill and knowledge from some of the leading experts in the country. If not enough water is released in the winter, there could be flooding. If too much is released, there won't be enough stored for the dry summer months. Water levels have to be kept low in fall and winter for flood control, yet drought conditions in the spring could prevent the reservoirs from filling adequately. Salmon, the lake, the locks, and people all compete for a limited amount of stored water. And while we strive to maintain optimum conditions for salmon in the river, we also help ensure the delivery of sufficient water to Lake Washington to protect the lake and support the operation of the Ballard Locks.

FROM SKY TO RESERVOIR

Melting snow and rain are gathered at two reservoirs, the Cedar and Tolt. Only 22% of the annual water flow from the Cedar River watershed is used for drinking water. The rest is dedicated to many things, including the Ballard Locks. Seventy percent of the city's water supply comes from the Cedar River, 29% comes from the Tolt River, and one percent comes from Seattle well fields.

PROTECTING SALMON ALONG THE WAY

Water levels in the Cedar River must be kept at healthy levels for proper breeding habitat for the salmon. Spawning, hatching and rearing occur year-round in the Cedar River for four species, Chinook, Coho, sockeye and steelhead.

The leaders of the city's first water department.
(Photo courtesy Museum of History & Industry)

Digging Seattle's water pipelines.
(Photo courtesy Museum of History & Industry)

The aftermath of the Great Seattle Fire.
(Photo courtesy University of Washington's Special Collections Division.)

HOW DID WE GET HERE?

Vision and expert management of our water resources goes back to the very beginning when Seattle's founders knew they wanted a good source of drinking water. As far back as 1888, they had their eye on a large chunk of land in the Cascade Mountains that could provide a reliable supply of fresh pure water to the growing city. After the great Seattle Fire, citizens voted to approve the creation of a municipal water system, the Cedar River Water Supply.

In 1964, that supply was increased by the addition of the South Fork of the Tolt River which supplies north Seattle and the Eastside. Today, the Cedar and Tolt watersheds provide drinking water to more than 1.3 million people. Our latest supply estimates and computer models show that we can meet the needs of our region through 2060 and perhaps beyond, despite continued population growth. As part of our supply estimates we plan for uncertain events like the effects of global warming and climate variability.

WATER CONSERVATION IS A GOOD IDEA TODAY AND EVERY DAY

Despite a population that has more than doubled, the Seattle area's water use is the same as it was in the 1960s. Customers have successfully increased their water use efficiency with the help of information, education and rebates from the City of Seattle's Saving Water Partnership. As a result, customers have helped lower their water bills and have delayed the need for expensive new sources of water. Customers are always encouraged to use water wisely by:

Ways to reduce your water use:

- Checking for and fixing faucet and toilet leaks.
- Washing only full loads in clothes and dish washers.
- Upgrading clothes washers and in-ground irrigation systems (Seattle has cash rebates!)
- Turning off the faucet while you are brushing your teeth or shaving.
- Choosing the right plants for your yard for healthy plants and less water use.
- Looking for a new toilet? Look for a Flush Star model (visit www.savingwater.org)

The Cedar River Watershed.
(Photo courtesy Hawk Jones/Kotagraph)

THE SEATTLE WATER SUPPLY

The 91,339-acre Cedar River Watershed and the 12,500 acre Tolt River Watershed are expertly managed to supply reliable drinking water. Both the Cedar and the Tolt Watersheds supply some of the purest water in the world. To ensure our water remains safe, SPU has purchase most of the land in both watersheds to ensure full control of the supply. Access to the watershed is restricted with very limited human activity.

Cedar and Tolt River supplied water meets or is better than regulatory standards for drinking water. To ensure quality, Seattle Public Utilities' laboratory analyzes over 20,000 microbial samples each year -- more than 50 a day -- and conducts chemical and physical monitoring daily, 365 days per year. At the largest state-accredited water utility laboratory in Washington, highly-qualified staff members within our Chemistry, Limnology and Microbiology sections conduct tests in conformance with state and federal regulations. Extensive process control and quality assurance testing is also conducted at the drinking water treatment facilities.

The SPU Laboratory staff provides sample collection and analysis for regulatory compliance, for operational decision making, as well as tests related to customer inquiries and construction projects. Regulatory compliance tests consist of inorganic chemicals (including lead, copper, cadmium, arsenic, barium, chromium, selenium, silver, nitrate and nitrite), organic chemicals (including total organic carbons, haloacetic acid and trihalomethanes), and microbiological parameters like coliform bacteria. Operational and source water monitoring includes tests for turbidity, UV absorbance, pH, conductivity, taste and odor compounds, and algae.

Seattle Public Utilities

ABOUT OUR WATER SOURCES

Two surface water sources provide the majority of water for the system. About 70% is provided by the Cedar River. The remaining 30% comes from the South Fork Tolt River (29%) and wells at the Seattle Wells (<1%). The two surface water sources begin in the Cascade Mountains and have very large protected watersheds. The wells are located in Burien and are only used to meet peak summer demand. Only one well was used in 2005 for 12 days.

Washington's Source Water Assessment Program is conducted by the Department of Health (DOH) Office of Drinking Water. According to DOH, all surface waters in Washington are given a susceptibility rating of "high", regardless of whether contaminants have been detected or whether there are any sources of contaminants in the watershed. The Seattle Wells have been given a susceptibility rating of "low" because of the type of aquifer, depth of well, and lack of contaminant detection. Information on the source water assessments is available from the DOH website at http://www.doh.wa.gov/ehp/dw/default.htm.

ABOUT CONTAMINANTS

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency and/or the Washington state board of health prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration and/or the Washington state department of agriculture regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. Environmental Protection Agency/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

OUR RESULTS

The results of monitoring in 2005 are shown in the table below. These results are for parameters regulated by the federal and state agencies. For other water quality information, please check our web site (listed on the back) or call 206-615-0827. We can also send you a list of the 177 compounds for which we tested but did not find in our surface water supplies, including unregulated contaminants.

		EPA's Allowable Limits		Levels in Cedar Water		Levels in Tolt Water		
Detected Compounds	**Units**	**MCLG**	**MCL**	**Average**	**Range**	**Average**	**Range**	**Typical Sources**
Raw Water								
Total Organic Carbon	ppm	NA	TT	0.7	0.3 - 1.3	1.4	1.2 - 1.7	Naturally present in the environment
Cryptosporidium	#/100L	NA	NA	ND	ND - 8	ND	ND - 2	Naturally present in the environment
Finished Water								
Turbidity	NTU	NA	TT	0.5	0.2 - 4.2	0.05	.02 - .14	Soil runoff
Fluoride	ppm	4	4	0.94	0.9 - 1.0	1.0	0.8 - 1.1	Water additive, which promotes strong teeth
Total Trihalomethanes	ppb	NA	80	33	25 - 41	41	25 - 51	By-products of drinking water
Haloacetic Acids (5)	ppb	NA	60	24	13 - 36	28	16 - 36	Cholorination
Total Coliform	% positive samples	0	5%	Highest Month = 1.2% Annual Average = 0.2%				Naturally present in the environment
Chlorine	ppm	MRDLG = 4	MRDL = 4	Average = 0.9 Range = 0 - 2.0				Water additive used to control microbes

Definitions

MCLG: Maximum Contaminant Level Goal - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
MCL: Maximum Contaminant Level - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
MRDL: Maximum Residual Disinfectant Level - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MRDLG: Maximum Residual Disinfectant Level Goal - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
TT: Treatment Technique - A required process intended to reduce the level of a contaminant in drinking water.
NTU: Nephelometric Turbidity Unit - Turbidity is a measure of how clear the water looks. The turbidity MCL that applied to the Cedar supply in 2005 is 5 NTU, and for the Tolt it was 0.3 NTU. 100% of the samples from the Tolt in 2005 were below 0.3 NTU.
NA: Not Applicable
ND: Not Detected
ppm: 1 part per million = 1 mg/L = 1 milligram per liter
ppb: 1 part per billion = 1 ug/L = 1 microgram per liter
1 ppm = 1000 ppb

Lead and Copper Monitoring Results					
Parameter and Units	**MCLG**	**Action Level +**	**2005 Results of First Round***	**Homes Exceeding Action Level**	**Source**
Lead, ppb	0	15	7.0	0 of 105	Corrosion of household plumbing systems
Copper, ppm	1.3	1.3	0.16	0 of 105	
Parameter and Units	**MCLG**	**Action Level +**	**2005 Results of Second Round***	**Homes Exceeding Action Level**	**Source**
Lead, ppb	0	15	5.0	2 of 102	Corrosion of household plumbing systems
Copper, ppm	1.3	1.3	0.12	0 of 102	

* 90th Percentile: i.e. 90 percent of the samples were less than the values shown.
\+ The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Although there is no detectable lead in our source water, tests show there are sometimes elevated levels of lead and copper in some samples, primarily because of corrosion of household plumbing systems. These results show that it is very important that homeowners, business owners and others be aware of their type of plumbing, and how the plumbing affects their drinking water quality.

The majority of homes have some risk of lead contamination in water that sits in pipes for longer than two hours. Where you live, when your plumbing was installed and what type of plumbing you have, all play a part in determining your potential exposure level. SPU treats the water to minimize the tendency for lead to enter the water, and results show that that we have been very successful at this.

To have your home tested, contact a certified lab near your area. The Washington State Department of Ecology is responsible for certifying labs in Washington. The Department of Ecology web site lists labs certified to test drinking water. Analysis costs range from $25 to $50.

Finally, remember that drinking water is only a minor contributor to overall exposure to lead. Other sources, including paint, soil and food, also contribute.

Report written and coordinated by Lauri Hennessey/Hennessey Communications.
Report designed by Design Hovie Studios. Cover photo and other photography by Hawk Jones/Kotagraph.

Seattle Public Utilities

HOW TO REACH US

Seattle Public Utilities and the City of Seattle want your opinion. You can participate through public hearings associated with environmental permitting and reviewing new facilities. In addition, we are updating our Water System Plan. Learn how at seattle.gov/util/services.

MORE INFORMATION

Seattle Public Utilities:
Customer Service Center
T 206-684-3000

Water Quality
T 206-615-0827
W seattle.gov/util/services/Water/Water_Quality
E drinkingwater.quality@seattle.gov

Water Conservation
W savingwater.org

Seattle History
W historylink.org

Museum of History and Industry
W mohai.org

Washington State Department of Health:
W doh.wa.gov/ehp/dw/

U.S. Environmental Protection Agency:
W epa.gov/safewater/

Safe Drinking Water Act Hotline
T 1-800-426-4791
E hotline-sdwa@epamail.epa.gov

FROM OUR WATERSHEDS TO YOUR HOME

Dear Neighbor,

I am proud to present you with the 2005 Drinking Water Quality Report and am especially happy to be able to report that our water is excellent! But don't take my word for it, please read the findings in this report for your self. Seattle's drinking water is some of the cleanest water found anywhere in the world for a major metropolitan city. In fact, we have lower levels of contaminants than the new stricter Federal guidelines require.

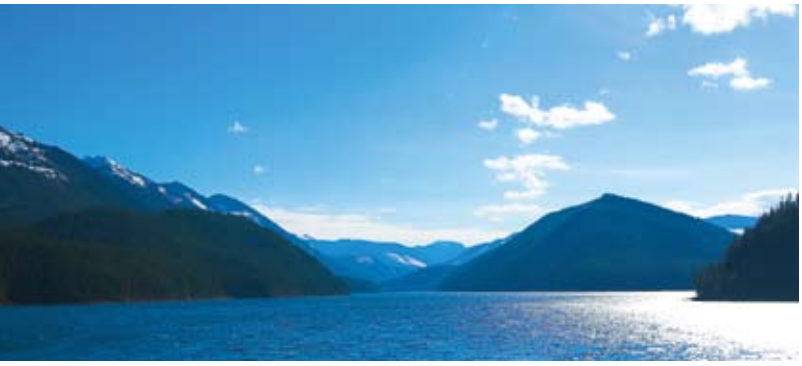
The success of our water system begins at the dawn of the 20th Century when our pioneering brethren had the foresight to purchase remote land in the Cascade Mountains. It thrives today, because of the incredible expertise with which the folks at Seattle Public Utilities manage this resource. Despite a population that continues to grow, our water supply should continue to provide enough drinking water to meet the needs of our city and most of King County well into the second half of the century. This expert management will become all the more important in the future as we face the challenges of global warming and its affects on our region.

I hope you enjoy reading this report and learn something new in the process. More than 1,000 people work every day to mange this resource so the rest of us can turn on a faucet or shower without ever having to think about it. It is yet one more reason why Seattle is considered one of the most livable cities in the nation.

Sincerely,

Mayor Greg Nickels

Seattle Public Utilities



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